
Space Weather Forecast

Issued on Wednesday, 26 June 2024 at 13:30 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales <https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales>

Space Weather Forecast Headline: Further Moderate class flares likely. Chance of G1/Minor geomagnetic storms days 3 and 4.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Moderate with an isolated low level M-class flare at 25/1245 UTC. There are nine regions currently on the disc. A returning region in the southeast is unusually long-lived feature that continues to bring a chance of notable flares due to it's magnetic complexity. The new region rotating onto the east limb is gradually becoming more visible, now analysed as a moderately long structure but with a simple magnetic structure apparent. Two regions in the southwest are moderately sized but with limited magnetic complexity. All The other regions on the disc are generally simple and stable. Magnetic looping from two large Ex regions is still present around the southwest limb.

Three coronal mass ejections with potential Earth directed components have been observed in recent days. One from 23 June and two from 25 Jun.

Solar Wind / Geomagnetic Activity: Solar wind speeds were at background levels. Interplanetary Magnetic Field was weak to moderate. The north-south component was weak to moderate, but mostly positive until 26/0600 UTC, before becoming predominantly negative thereafter. Geomagnetic activity was Quiet to Unsettled (Kp 1-3).

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) has remained at background levels with no solar radiation storms occurring.

Four-Day Space Weather Forecast Summary

Solar Activity: There is a chance of further Moderate flares, with a slight chance of isolated Strong class flares. These most likely from the most significant region on the visible disc, in the southeast.

Solar Wind / Geomagnetic Activity: Three coronal mass ejections feature in the forecast period. The first from 23 Jun may have a glancing impact on day 2 (27 Jun). The second from early on 25 Jun may have a glancing impact on day 3 (28 Jun). The third coronal mass ejection from late on 25 Jun is likely to arrive on day 4 (29 Jun) or perhaps after this forecast period. Otherwise, solar winds are expected to remain indicative of a slow background conditions.

Geomagnetic activity is expected to be Quiet to Active days 1 and 2 (26/27 Jun). There is then a chance of G1-G2 Minor/Moderate Storms later day 3 or day 4 (28/29 Jun) due to the arrival of the second and third coronal mass ejections.

Energetic Particles / Solar Radiation: The count rate of energetic particles (high energy protons) is expected to remain at background levels, but with an initial slight chance of exceeding the Minor Storm threshold should any notable flares occur from any of the three large

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sunspots now around the western limb.

Geomagnetic Storms:

Geo-Magnetic Storm	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Minor or Moderate	G1 to G2	No	1	10	40	40
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability			(%)	(%)	(%)	(%)
Active	R1-R2 M Class	Yes	55	55	55	55
Very Active	R3 to R5 X	No	5	5	5	5

Solar Radiation Storms - (High Energy Protons):

Radiation Storms	Level (cm ⁻² sr ⁻¹ s ⁻¹)	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC)	Day 2 (00-24 UTC)	Day 3 (00-24 UTC)	Day 4 (00-24 UTC)
Probability (Exceedance)			(%)	(%)	(%)	(%)
Active	≥ S1	No	10	5	5	5
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = cm⁻²sr⁻¹s⁻¹)